

1st Floor

DESIGNATION	CAPACITY	VOLTAGE	MODEL #	MANUFACTURER	OPTIONS
EW-1, 2, 3	3 KW	240 V / 1 PHASE	LFK304	OMARK	1, 2

1. T-STAT
2. SEM-RECESSED LFKS-2

AIR OUTLETS									
DESIGNATION	SLOTS	LENGTH	SLOT SIZE	PLENUM OUTLET	NECK SIZE	TYPE	SIZE	MODEL	MANUFACTURER
LD-A	4	4"	1"	10"	---	LAYN	---	5010	NALOR
LD-B	4	4"	1"	12"	---	LAYN	---	5010	NALOR
LD-C	4	4"	1"	8"	---	LAYN	---	5010	NALOR
CD-A	---	---	---	---	10"	LAYN	---	RNS	NALOR
CD-B	---	---	---	---	8"	LAYN	---	RNS	NALOR
RC-A	---	---	---	---	---	WALL-MOUNTED	48X48	5145H	NALOR
RC-B	---	---	---	---	---	WALL-MOUNTED	20X20	5145H	NALOR
RC-C	---	---	---	---	---	LAYN	24X24	5145H	NALOR

TERMINAL UNITS									
DESIGNATION	DESIGN COOLING AIRFLOW	VALVE HEATING AIRFLOW	ELECTRIC HEATER		PRIMARY INLET	UNIT MODEL	MANUFACTURER		
			KILOWATT	VOLTAGE					
VAV-1-1	1178	685	7.5	277/3	10"	VCEF	TRANE		
VAV-1-2	1000	610	7.5	277/3	10"	VCEF	TRANE		
VAV-1-3	458	325	2.5	277/3	8"	VCEF	TRANE		
VAV-1-4	212	165	1.5	277/3	5"	VCEF	TRANE		
VAV-1-5	745	350	3.0	277/3	8"	VCEF	TRANE		
VAV-1-6	801	315	4.0	277/3	8"	VCEF	TRANE		
VAV-1-7	552	340	4.0	277/3	8"	VCEF	TRANE		
VAV-1-8	508	300	3.0	277/3	8"	VCEF	TRANE		
VAV-1-9	390	250	2.0	277/3	8"	VCEF	TRANE		
VAV-1-10	592	250	2.0	277/3	8"	VCEF	TRANE		
VAV-1-11	759	300	3.0	277/3	8"	VCEF	TRANE		
VAV-1-12	733	300	3.0	277/3	8"	VCEF	TRANE		
VAV-1-13	227	165	1.5	277/3	5"	VCEF	TRANE		
VAV-1-14	874	605	7.5	277/3	10"	VCEF	TRANE		
VAV-1-15	863	605	5.0	277/3	8"	VCEF	TRANE		
VAV-1-16	1100	605	7.5	277/3	10"	VCEF	TRANE		
VAV-2-1	1292	500	4.0	277/3	10"	VCEF	TRANE		
VAV-2-2	1064	550	4.0	277/3	10"	VCEF	TRANE		
VAV-2-3	257	183	2.0	277/3	5"	VCEF	TRANE		
VAV-2-4	739	350	3.0	277/3	8"	VCEF	TRANE		
VAV-2-5	741	320	4.0	277/3	8"	VCEF	TRANE		
VAV-2-6	741	320	3.5	277/3	8"	VCEF	TRANE		
VAV-2-7	447	240	2.0	277/3	6"	VCEF	TRANE		
VAV-2-8	463	400	4.0	277/3	6"	VCEF	TRANE		
VAV-2-9	399	250	2.0	277/3	6"	VCEF	TRANE		
VAV-2-10	680	450	4.0	277/3	8"	VCEF	TRANE		
VAV-2-11	680	450	4.0	277/3	8"	VCEF	TRANE		
VAV-2-12	680	450	4.0	277/3	8"	VCEF	TRANE		
VAV-2-13	1521	585	7.5	277/3	12"	VCEF	TRANE		
VAV-2-14	414	240	3.0	277/3	6"	VCEF	TRANE		
VAV-2-15	817	350	3.5	277/3	8"	VCEF	TRANE		
VAV-2-16	845	425	5.0	277/3	8"	VCEF	TRANE		
VAV-2-17	296	130	1.0	277/3	5"	VCEF	TRANE		

PACKAGED ROOFTOP UNITS						
DESIGNATION	TONNAGE	CFM	VOLTAGE	HEAT INPUT (BTUH)	MODEL #	MANUFACTURER
RTU-1	30	10300	460 V / 3 PHASE	600000	YH3504E	TRANE
RTU-2	25	8100	460 V / 3 PHASE	400000	YH301C3HF	TRANE

EXHAUST FAN					
DESIGNATION	CFM	VOLTAGE	RPM	MODEL #	MANUFACTURER
EF-1	1214 @ 0.125" SP	120 V / 1 PHASE	1055	LV500L	BROAN

VAV CHANGEOVER/BYPASS								
DESIGNATION	VARIABLE DAMPER SIZE	DESIGN COOLING AIRFLOW (CFM)	MAX INLET VELOCITY (ft/min)	MIN INLET VELOCITY (ft/min)	COOLING INLET VELOCITY (ft/min)	UNIT CONTROL	UNIT MODEL	MANUFACTURER
BYP-25	30 x 20 RECTANGULAR	7800	2460	1800	1896		VARA - RECTANGULAR	TRANE
BYP-30	30 x 20 RECTANGULAR	8495	2400	1800	2039		VARA - RECTANGULAR	TRANE

HUMIDIFIER												
DESIGNATION	CFM	FPM	VOLTAGE	ACTUAL CAPACITY (LBS/HR)	REQUIRED CAPACITY (LBS/HR)	# OF MANIFOLDS	MANIFOLD MODEL #	DUCT HEIGHT (IN)	DUCT WIDTH (IN)	VAPOR TRAIL (FT)	MODEL	MANUFACTURER
H-1	1403.0	1403.0	460 V / 3 PHASE	45.0	34.2	1	D-1	12.0	14.0	6.1	HC-6100	ARMSTRONG

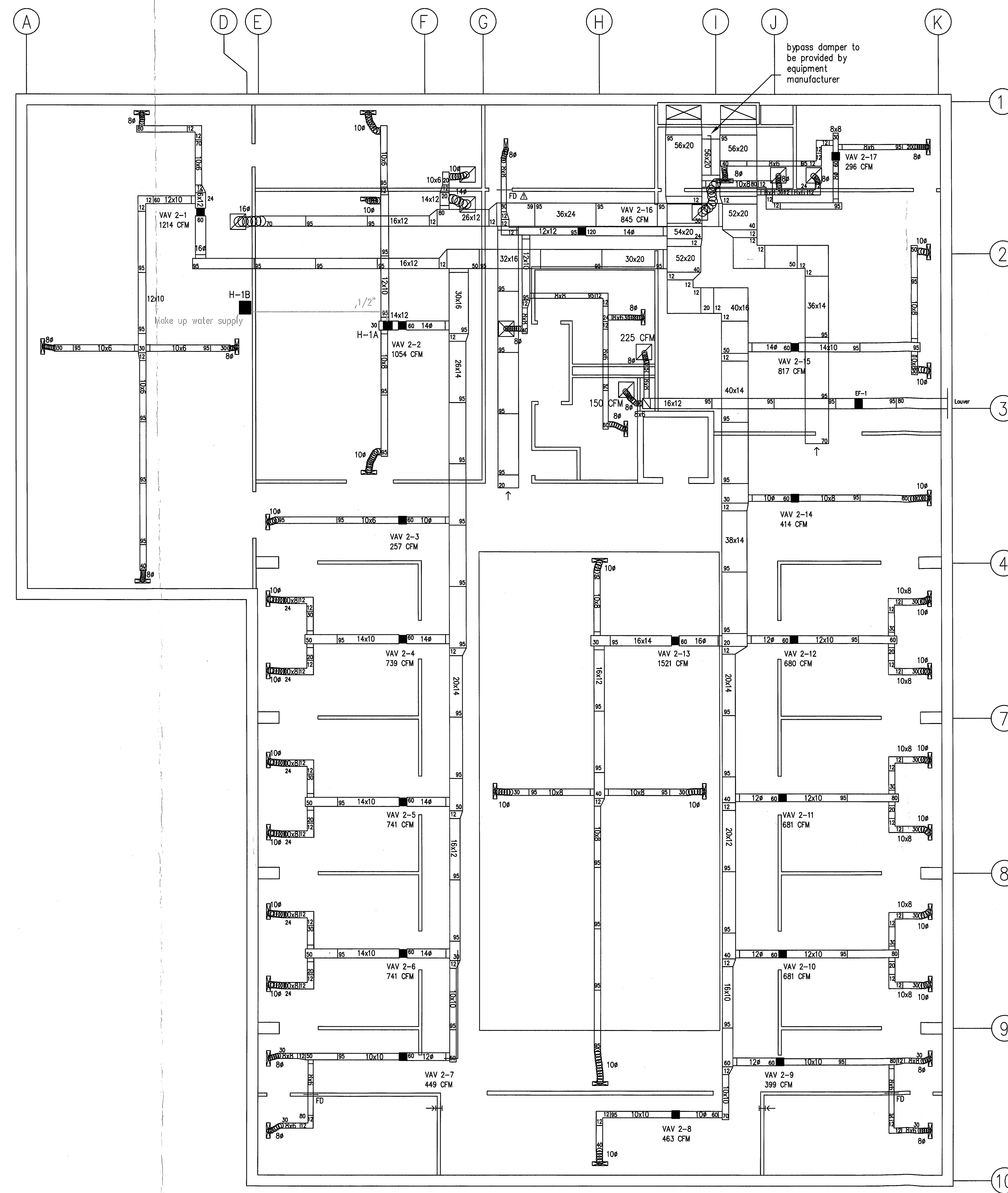
VALAIRCO INC. JOSEPH RICHARD VALENTI, PE
 LICENSE NO. 21654
 1013 KENNEDY BOULEVARD 908-725-6200
 MANVILLE, NJ 08835 FAX: 908-725-6277

PROJECT UKRAINIAN ORTHODOX CHURCH
 HISTORICAL AND EDUCATIONAL COMPLEX
 SOMERSET, NJ

DWG. TITLE
 1st FLOOR HVAC

DRWN	CKD	DATE	SCALE	JOB NO.	DWG. No.
FG	RJV	9-2-08	1/8"=1'-0"	4366	M-1

Joseph R. Valentini



NOTES

- 1) Ductwork will be fabricated and installed in conjunction with ASHRAE and SMACNA.
- 2) Supply diffusers will be linear to accommodate changes in air volume.
- 3) A tracker control system will be utilized and integrated on components of the HVAC system including the packaged heating/cooling units, the bypass dampers and the VAV units. The tracker panels will be located in the storage room.
- 4) The first 15' on both the supply and return will be lined internally with 1" duct lining. The remaining supply ductwork will be insulated externally with 1" insulation. All joints to be foil sealed and wired on 4' centers.
- 5) The HVAC drawings will be coordinated with the structural drawing, ceiling layout, electrical and plumbing drawings. All to be coordinated to eliminate any conflicts prior to construction.
- 6) Gas piping and gas piping connections to the HVAC units, as well as make up water to the Armstrong steam generator will be by the plumbing contractor. The electrical power wiring to the HVAC units and VAV units including connections will be by the electrical contractor. Control wiring will be by the HVAC contractor.

REVISIONS:
 ▲ ADD FIRE DAMPER, STAIR #2 1/29/2009

2nd Floor

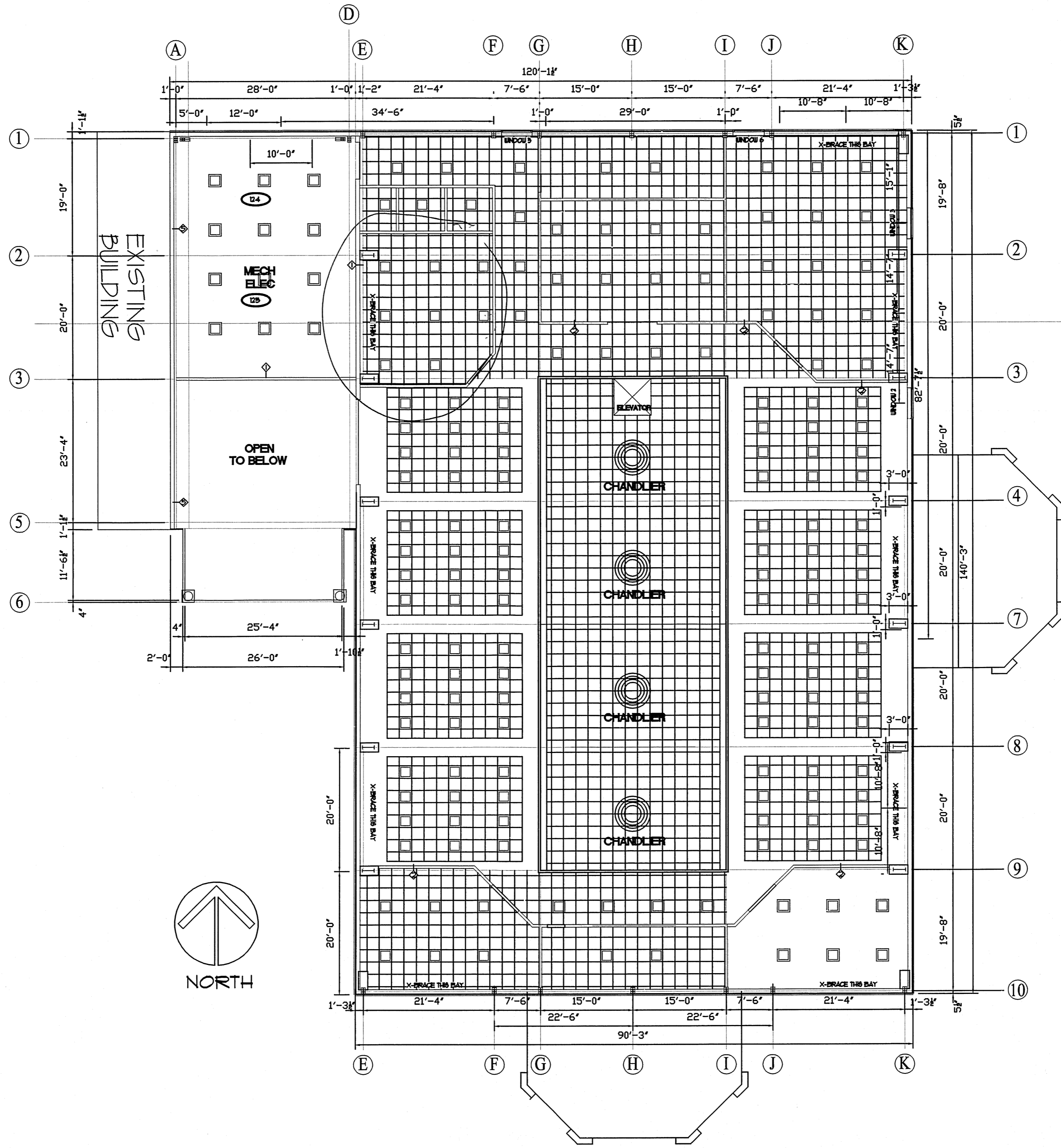
VALAIRCO INC. JOSEPH RICHARD VALENTI, PE
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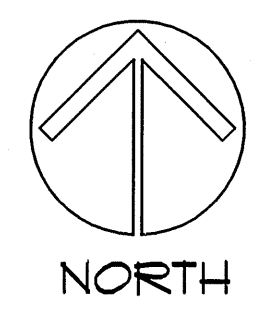
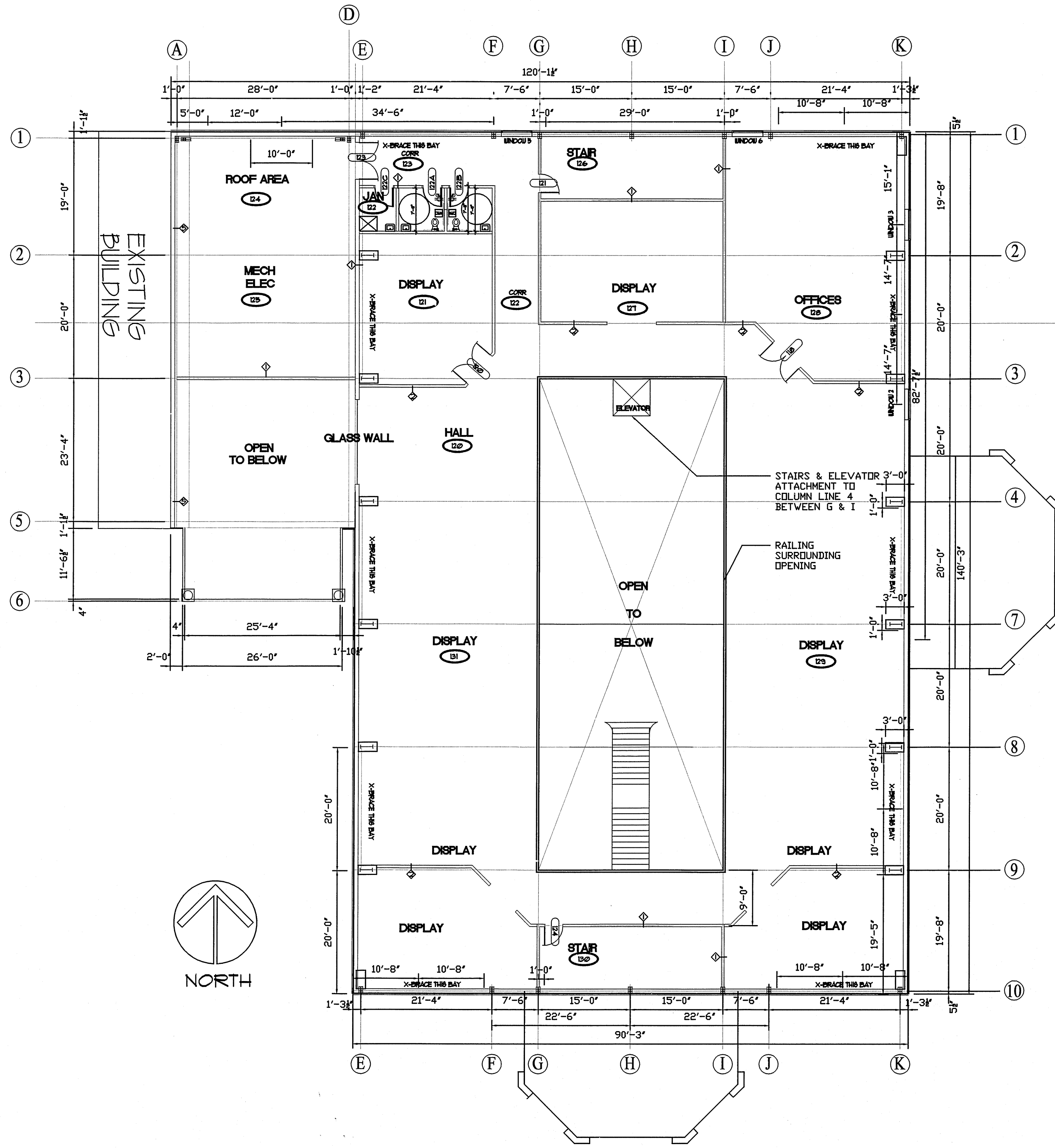
PROJECT
 UKRAINIAN ORTHODOX CHURCH
 HISTORICAL AND EDUCATIONAL COMPLEX
 SOMERSET, NJ

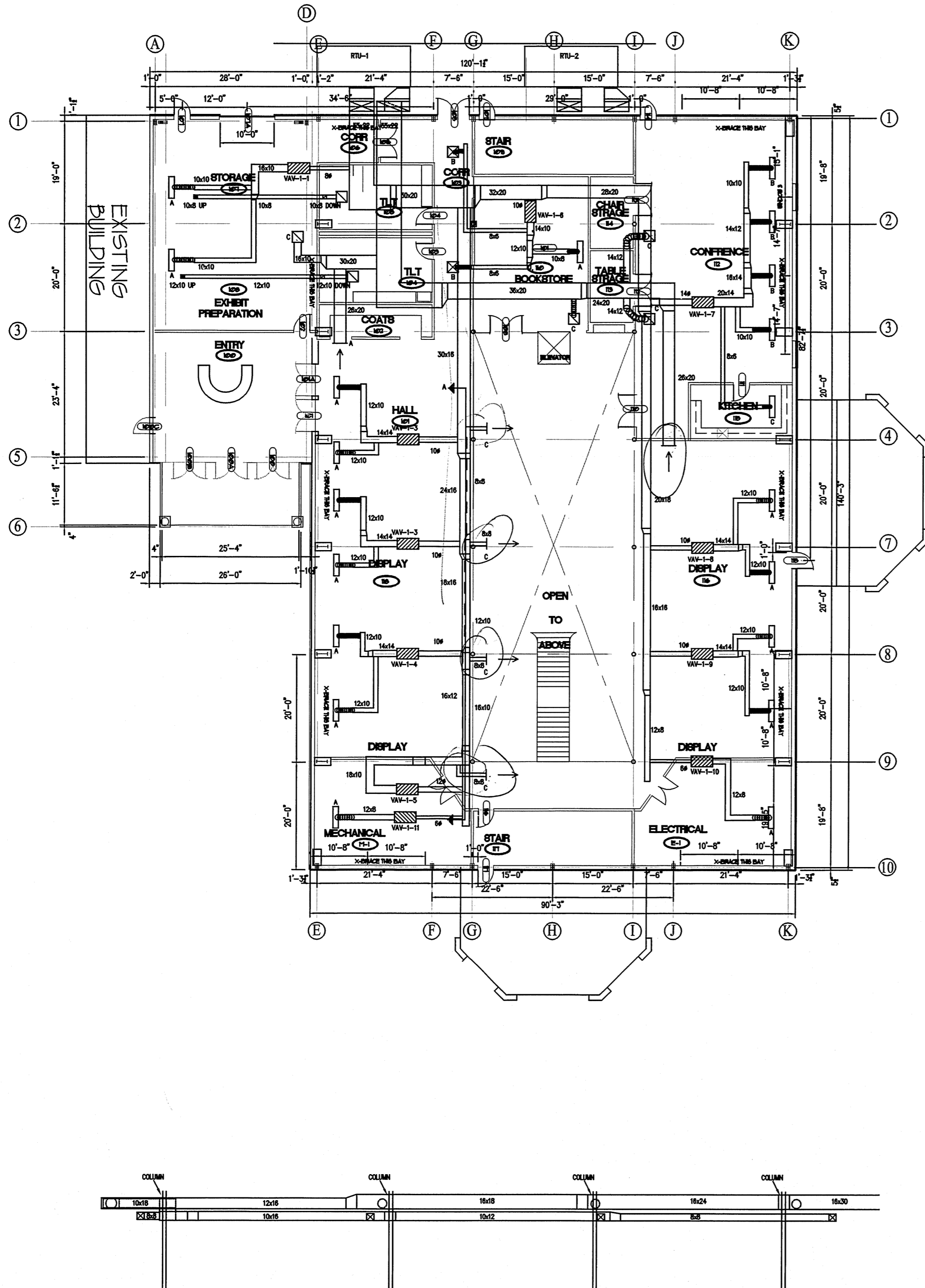
DWG. TITLE
 2nd FLOOR HVAC

DRWN	CKD	DATE	SCALE	JOB NO.	DWG. No.
CJV	RJV	9-2-08	1/8"=1'-0"	4366	M-2

Joseph R. Valenti







CROSS SECTION A-A scale: 1/4" = 1'-0"

VENTILATION SCHEDULE

UNIT	ROOM NUMBER	NO. OF PEOPLE	PEOPLE	MINIMUM DESIGN REQUIREMENTS - VENTILATION (IBC 2000)		CORRIDOR/UTILITIES		ACTUAL DESIGN - VENTILATION			UNIT SERVED	
				WATER CLOSET OR URINAL	QUANTITY	AREA SQ. FT.	CFM PER SQ. FT.	TOTAL CFM REQ'D.	O.A. CFM	ESL. CFM		TOTAL CFM
VAV-1-1	170 / 106 *	2	20	40	1	800	0.15	90	315	315	900	RTU-1
VAV-1-2	101 *	13	20	260					315	315	900	RTU-1
VAV-1-3	118 *	13	20	260					315	315	900	RTU-1
VAV-1-4	118 *	13	20	260					315	315	900	RTU-1
VAV-1-5	118 *	3	20	60					455	455	1150	RTU-1
VAV-1-6	103 / 110 *	3	20	60					385	385	1100	RTU-1
VAV-1-7	112 / 115 *	25	20	500					710	710	2031	RTU-1
VAV-1-8	118 *	19	20	380					410	410	1170	RTU-1
VAV-1-9	118 *	19	20	380					410	410	1170	RTU-1
VAV-1-10	E-1	-	-	-		800	0.15	90	410	410	90	RTU-1
VAV-1-11	M-1	-	-	-		800	0.15	90			90	RTU-1
VAV-2-1	121 / 122	5	20	100					455	455	1292	RTU-2
VAV-2-2	124 / 125	-	-	-					365	365	1046	RTU-2
VAV-2-3	120	5	20	100					365	365	1035	RTU-2
VAV-2-4	120 *	8	20	120					170	170	478	RTU-2
VAV-2-5	131 *	8	20	120					220	220	623	RTU-2
VAV-2-6	131 *	8	20	120					220	220	623	RTU-2
VAV-2-7	131 *	8	20	120					220	220	623	RTU-2
VAV-2-8	131 *	8	20	120					240	240	675	RTU-2
VAV-2-9	-	-	-	-					200	200	575	RTU-2
VAV-2-10	-	-	-	-					200	200	575	RTU-2
VAV-2-11	127 *	3	20	60					190	190	520	RTU-2
VAV-2-12	128	2	20	40					340	340	968	RTU-2
VAV-2-13	128 *	8	20	160					155	155	444	RTU-2
VAV-2-14	128 *	8	20	160					155	155	444	RTU-2
VAV-2-15	128 *	8	20	160					155	155	444	RTU-2
VAV-2-16	128 *	8	20	160					155	155	444	RTU-2
VAV-2-17	128 *	8	20	160					225	225	640	RTU-2
	104				5	75			375	375	EF-1	
	105				9	75			675	675	EF-2	
	122A				1	75			75	75	EF-3	
	122B				1	75			75	75	EF-3	

* one half of the actual occupancy used since activities are restricted to less than three hours in duration

FIRE DAMPERS

SIZE	QUANTITY
8x8	2
12x10	1
20x22	2

FANS

DESIGNATION	CFM	VOLTAGE	RPM	MODEL #	MANUFACTURER	NOTES
EF-1	400	120 V / 1 PHASE	775	L400L	BROWN	1
EF-2	700	120 V / 1 PHASE	1090	L700L	BROWN	1
EF-3	200	120 V / 1 PHASE	965	L200L	BROWN	1

NOTES: WITH INLINE ADAPTOR KIT

ELECTRIC WALL HEATERS

DESIGNATION	CAPACITY	VOLTAGE	MODEL #	MANUFACTURER	OPTIONS
EW-1, 2	3 KW	240 V / 1 PHASE	LFX304	GMARK	1, 2

1. T-STAT
2. SEMI-RECESSED LFYS-2

AIR OUTLETS

DESIGNATION	SLOTS	LENGTH	SLOT SIZE	PLENUM (OUTLET)	NECK SIZE	TYPE	SIZE	MODEL	MANUFACTURER
LD-A	4	4"	1"	10"	---	LAYN	---	5010	NALOR
LD-B	4	4"	1"	12"	---	LAYN	---	5010	NALOR
LD-C	4	4"	1"	8"	---	LAYN	---	5010	NALOR
CD-A	---	---	---	---	---	LAYN	---	RNS	NALOR
CD-B	---	---	---	---	---	LAYN	---	RNS	NALOR
RG-A	---	---	---	---	---	WALL-MOUNTED	48x48	5145H	NALOR
RG-B	---	---	---	---	---	WALL-MOUNTED	20x20	5145H	NALOR
RG-C	---	---	---	---	---	LAYN	24x24	5145H	NALOR

HUMIDIFIER

DESIGNATION	CFM	FPM	VOLTAGE	ACTUAL CAPACITY (LBS/HR)	REQUIRED CAPACITY (LBS/HR)	# OF MANIFOLDS	MANIFOLD MODEL #	DUCT HEIGHT (IN)	DUCT WIDTH (IN)	VAPOR TRAIL (FT)	MODEL	MANUFACTURER
H-1	520.0	520.0	480 V / 3 PHASE	27.0	14.8	1	D-1	12.0	12.0	6.1	HC-1100	ARMSTRONG

TERMINAL UNITS

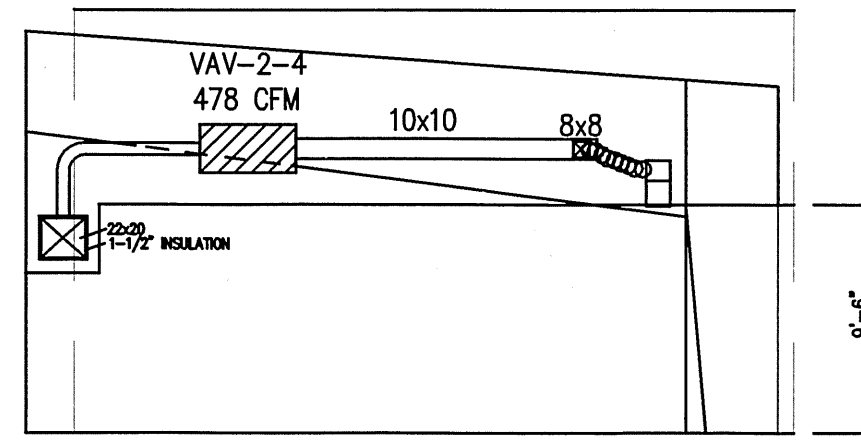
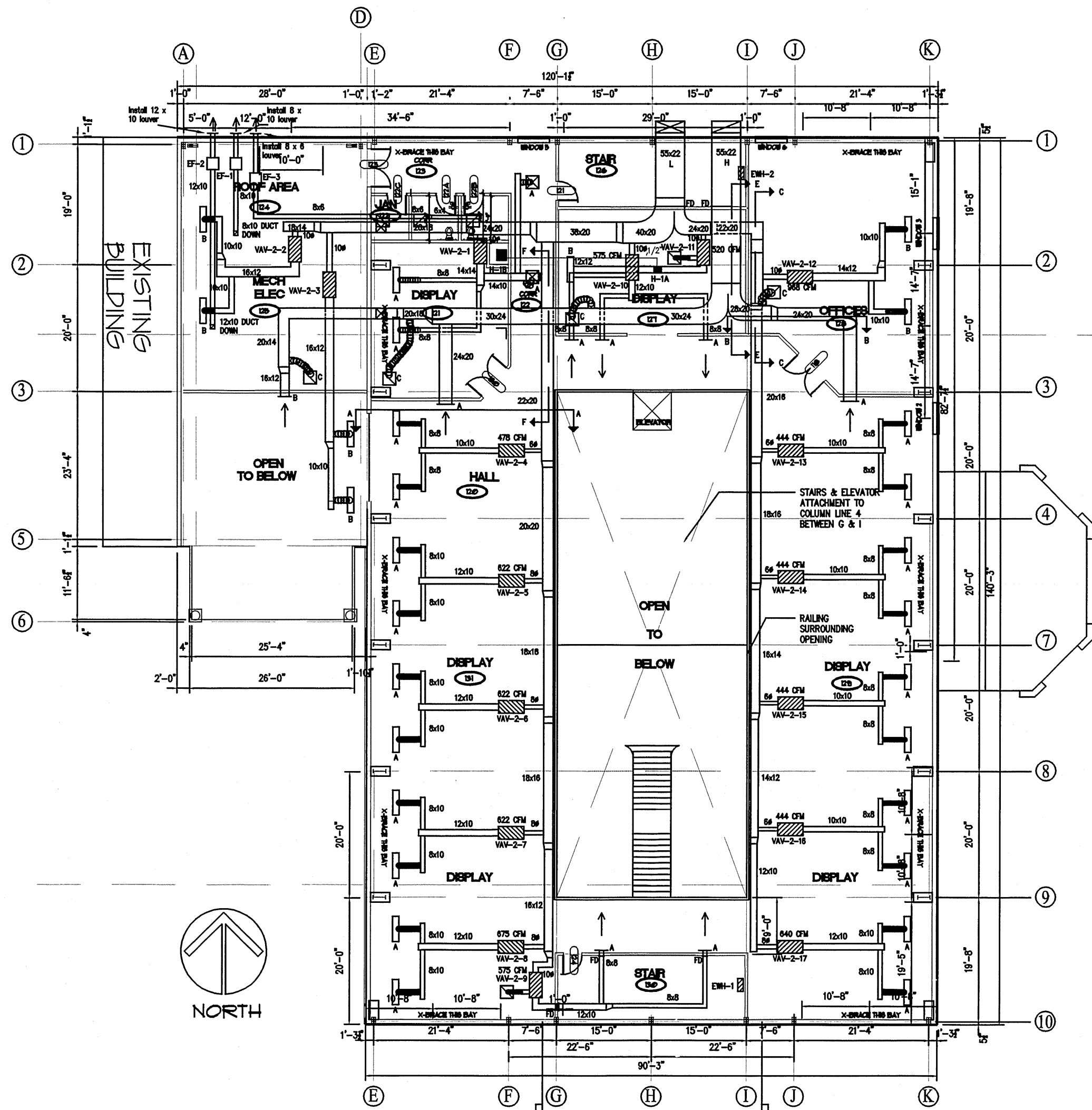
DESIGNATION	COOLING CFM MAX	COOLING CFM MIN *	UNIT LAT	HEAT (KW)	TYPE	SIZE	MODEL	MANUFACTURER
VAV-1-1	895	90	94.34	4.0	SINGLE DUCT	8"	VCEFD6	TRANE
VAV-1-2	900	90	95	10.0	SINGLE DUCT	10"	VCEFD10	TRANE
VAV-1-3	900	90	95	10.0	SINGLE DUCT	10"	VCEFD10	TRANE
VAV-1-4	900	90	95	10.0	SINGLE DUCT	10"	VCEFD10	TRANE
VAV-1-5	1150	115	95.82	13.0	SINGLE DUCT	12"	VCEFD12	TRANE
VAV-1-6	1100	110	95.82	6.5	SINGLE DUCT	10"	VCEFD10	TRANE
VAV-1-7	2031	205	95.82	13.0	SINGLE DUCT	14"	VCEFD14	TRANE
VAV-1-8	1170	120	94.34	10.0	SINGLE DUCT	10"	VCEFD10	TRANE
VAV-1-9	1170	120	94.34	10.0	SINGLE DUCT	10"	VCEFD10	TRANE
VAV-1-10	431	44	94.34	3.0	SINGLE DUCT	6"	VCEFD6	TRANE
VAV-1-11	431	44	94.34	3.0	SINGLE DUCT	6"	VCEFD6	TRANE
VAV-2-1	1292	130	96.97	5.0	SINGLE DUCT	10"	VCEFD10	TRANE
VAV-2-2	1296	130	96.98	7.0	SINGLE DUCT	10"	VCEFD10	TRANE
VAV-2-3	1035	104	97.22	5.5	SINGLE DUCT	10"	VCEFD10	TRANE
VAV-2-4	476	50	82.47	2.5	SINGLE DUCT	6"	VCEFD6	TRANE
VAV-2-5	625	70	95	4.0	SINGLE DUCT	8"	VCEFD8	TRANE
VAV-2-6	625	70	95	4.0	SINGLE DUCT	8"	VCEFD8	TRANE
VAV-2-7	625	70	95	4.0	SINGLE DUCT	8"	VCEFD8	TRANE
VAV-2-8	675	70	94.34	5.0	SINGLE DUCT	8"	VCEFD8	TRANE
VAV-2-9	575 COOLING/1075	60 COOLING/560	95	8.0	FAN POWERED	10"	VSEFD08S0	TRANE
VAV-2-10	575 COOLING/1075	60 COOLING/560	95	8.0	FAN POWERED	10"	VSEFD08S0	TRANE
VAV-2-11	520 COOLING/1020	60 COOLING/560	95	8.0	FAN POWERED	10"	VSEFD08S0	TRANE
VAV-2-12	968	100	95.09	7.0	SINGLE DUCT	10"	VCEFD10	TRANE
VAV-2-13	444	50	95	3.0	SINGLE DUCT	6"	VCEFD6	TRANE
VAV-2-14	444	50	95	3.0	SINGLE DUCT	6"	VCEFD6	TRANE
VAV-2-15	444	50	95	3.0	SINGLE DUCT	6"	VCEFD6	TRANE
VAV-2-16	444	50	95	3.0	SINGLE DUCT	6"	VCEFD6	TRANE
VAV-2-17	640	70	95.28	5.5	SINGLE DUCT	8"	VCEFD8	TRANE

* IN UNOCCUPIED MODE ONLY

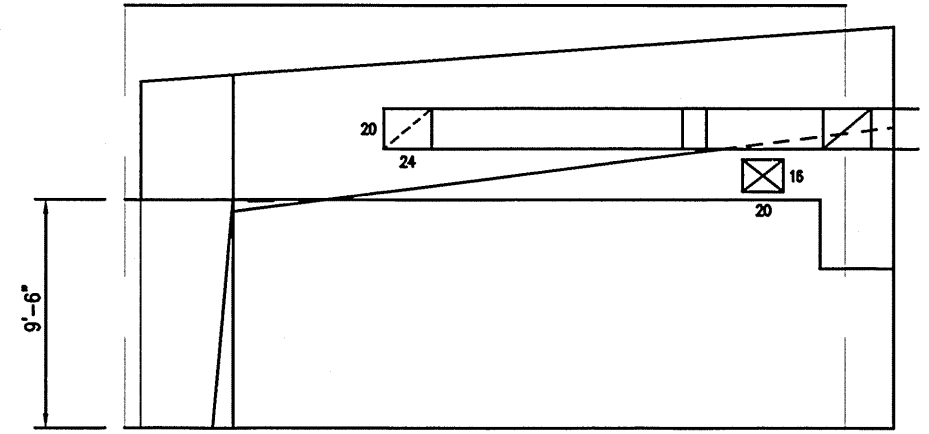
PACKAGED ROOFTOP UNITS

DESIGNATION	CFM	VOLTAGE	HEAT OUTPUT (BTU/H)	MODEL #	MANUFACTURER
RTU-1 & 2	12000	480 V / 3 PHASE	486000	TCH3004+	TRANE

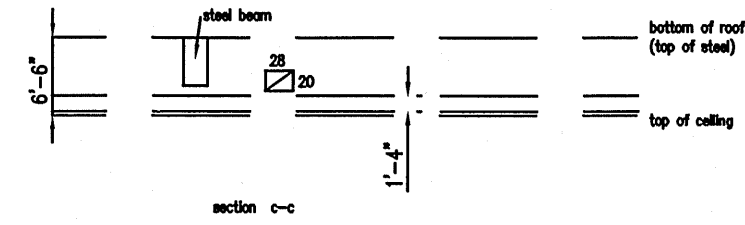
HISTORICAL AND EDUCATIONAL COMPLEX		VALAIRCO				
UKRAINIAN ORTHODOX CHURCH of the U.S.A.						
135 DAVIDSON AVENUE SOMERSET, NJ		JOB#: 4366		BY: FVG	DATE: 01/12/07	SHEET
LOWER FLOOR		UKRAINIAN CHURCH		CK:	DATE:	M1
SCALE: 1/8" = 1.0'		ENGINEERING CERTIFICATE NO. 24620067300				



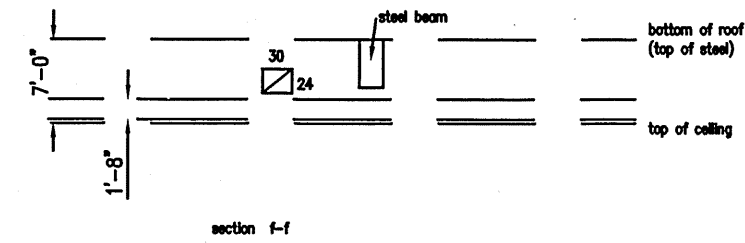
CROSS SECTION A-A scale: 1/4" = 1'-0"



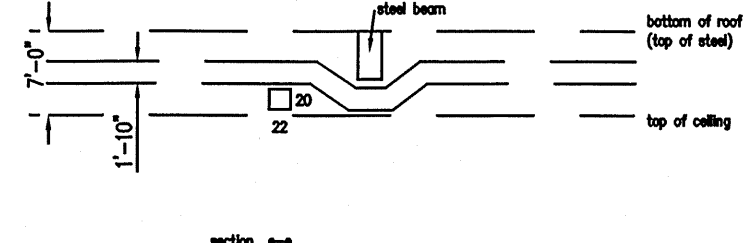
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section c-c



section f-f



section e-e

HISTORICAL AND EDUCATIONAL COMPLEX		VALAIRCO		▲	
UKRAINIAN ORTHODOX CHURCH of the U.S.A.				▲	
135 DAVIDSON AVENUE SOMERSET, NJ				▲	
UPPER FLOOR		JOB#: 4366	BY: FVG	DATE: 01/12/07	SHEET
SCALE: 1/8" = 1.0'		UKRAINIAN CHURCH	CK:	DATE:	M2
		ENGINEERING CERTIFICATE NO. 246A28067300			